

Liberator V1000 Dual Port

High capacity dual port 60GHz band radio powers small cell backhaul and enterprise connectivity

The Liberator V1000 Dual Port is an easy to deploy, cost-effective, point-to-point wireless Ethernet bridge operating in the 60 GHz millimeter wave V band, delivering full duplex capacity of up to 1 Gbit/s. Link distances of up to 800 meters are supported. A secondary data port with both GigE copper & SFP sockets, allows flexibility for either Cat5 or fiber connections interchangeably. This allows both copper and fiber tributaries to be aggregated over the radio link, and is particularly useful for daisy-chaining in small cell backhaul applications. Extra frequency channels are available for improved interference protection, as well as a robust antenna radome for withstanding severe weather conditions.

With a minimal 18 x 18 cm form factor, this all-outdoor platform is optimized for invisible street level deployments in challenging high density networks. A high gain antenna with low sidelobes, combined with the option to use multiple channels, ensures excellent interference immunity for co-located radios on a single pole. The antenna beam-width is sufficiently wide to allow for the pole sway, twist and tilt encountered with small cell backhaul links. Combining carrier class performance with advanced features such as adaptive modulation, multi-channel operation, low latency, software-activated flexible link throughput and AES 256 bit encryption, the V1000 Dual Port supports a variety of short haul connectivity and backhaul applications.

Backhaul and Short Haul Applications

The Liberator V1000 Dual Port is optimal anywhere that high capacity, short haul point-to-point connectivity is needed, including dense urban networks. Applications include:

- Small cell 3G and LTE backhaul
- Campus connectivity and building to building private links
- Backbone / fiber extension and wired network bridging

Novel & Innovative Technology

A combination of leading-edge technology and superior attention to detail in every element of design and manufacture means that the V1000 Dual Port radio packs huge performance and resilience into a small form factor platform. The use of frequency division duplexing (FDD) means that the full capacity of the radio is available in both directions simultaneously, rather than being shared.

About V Band

The V band, between 57 and 64 GHz, is available on a license-exempt basis, enabling backhaul and connectivity links to be rapidly and cost-effectively deployed. In this band, radios can operate without interference issues, even when deployed in close proximity in highly dense networks, due to the oxygen absorption characteristics of this millimeter wave band. Large networks can be deployed and operate at extremely high densities with tens of links on a single rooftop or street.

Dual-port Feature Packed V Band Radio

- Up to 1Gbps full-duplex capacity with FDD
- Link distances up to 800 meter range
- Primary port GigE/PoE, secondary data port GigE copper/SFP
- SyncE and 1588v2 timing
- Interference-free operation, 60 GHz millimeter wave V band
- Compact form-factor for small cell backhaul
- Robust housing for extreme weather conditions
- Easy alignment with optical scope



Liberator V1000 Dual Port millimeter wave V band radio

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Specifications

Frequency bands	57-64 GHz band
Modulation	8-PSK/QPSK
Range	Up to 800 meters
Ethernet throughput	Full duplex: 1 Gbit/s (8-PSK)/700 Mbit/s (QPSK)/500 Mbit/s
Maximum Tx power	+6 dBm
Maximum EIRP	44 dBm
Channel width	500 MHz
Antenna gain	38 dBi
Link adaptation	Adaptive coding and modulation, ATPC
Ultra-fast boot time	10 seconds from power-up to full data transmission
Availability	Up to 99.999% (use Link Availability Calculator)
Mean time between failures (MTBF)	25 years
Wind load	160 km/h (operating) and 200 km/h (survival)
Latency	<250 microseconds
Synchronization	SyncE and IEEE 1588v2
VLAN for management	IEEE 802.1Q
Quality of service (QoS)	802.1p, DiffServ, 8 queues
Network management	SNMP v1, v2c, v3
Graphical user interface (GUI)	HTTP web browser
Alarms	User-defined alarms and thresholds on GUI, Syslog, SNMP
Statistics	1 min, 15 min, 24 hour statistics over 30 days, downloadable
Firmware control	Dual firmware banks with safety rollback feature
Encryption	AES 256-bit with licence key upgrade
Data ports	Port 1 GigE copper, Port 2 optional GigE copper or fibre SFP
Alignment	Voltmeter port, compact alignment scope
Outdoor unit (ODU) terminal size	182 x 182 x 68 mm
Weight	2.5 kg (ODU only)
Power supply	Power Over Ethernet ("Ultra-PoE"/PoE++), consumption 35W
Operating temperature	-40°C to +55°C

About Fastback Networks

Fastback Networks was founded with a vision to deliver innovative technology for the mobile infrastructure of the future. Fastback solutions enable network operators to expand and enhance services, and private networks to secure, monitor and manage operations via high capacity data connectivity. With insights derived from the collective team's experience building leading edge radio and data networking solutions, Fastback Networks looks at the challenges of 4G/5GLTE deployment with fresh eyes and better ideas, and develops transformational mobile backhaul solutions that enable the acceleration of the mobile future. Fastback Networks is a privately held company funded by Business Growth Fund, Foundation Capital, Granite Ventures, Harmony Partners, Juniper Networks Junos Innovation Fund, and Matrix Partners. More information is available at www.fastbacknetworks.com.



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